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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,147	02/10/2004	Thomas Hansen	10191/3530	3116

26646 7590 04/27/2005

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EXAMINER	
GLENN, KIMBERLY E	

ART UNIT	PAPER NUMBER
2817	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/776,147	HANSEN ET AL.
	Examiner	Art Unit
	Kimberly E. Glenn	2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-4 and 6-9 is/are rejected.

7)☒ Claim(s) 5 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 8/16/04 & 11/29/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohhashi et al US Patent 6,400,234 (of record).

Ohhashi et al discloses in figures 17-20, a strip line feeding apparatus comprising of a first and second strip conductor patterns 1a, 1b, (first and second conductive devices) first, second and third dielectric substrates 5a, 5b, 5c, a first and second ground conductor patterns 6a, 6b (first and second reference potential planes). And the second strip conductor pattern 1b, the third dielectric substrate 5c and the first ground conductor pattern 6a form a micro strip line. The first and second strip conductor patterns are connected to each other through the through-hole for inner conductor 3. The first and second ground conductor patterns 6a, 6b are connected to each other through the through-holes for outer conductor 4, which are disposed around the through-hole for inner conductor 3. The through-holes 3, 4 form a quasi coaxial line. The first strip conductor pattern 1a is disposed on the surface of the first dielectric substrate 5a while the second strip conductor patterns is disposed on the surface of dielectric substrate 5c.

A plurality of the through-holes for outer conductor 4 are disposed in the arc like conductor 2. The through-holes for outer conductor 4 penetrate the arc like conductor pattern 2 so that the first and second ground conductor patterns 6a, 6b, which are found at the upper surface and the lower surface of the strip line, are electrically connected to the arc like conductor pattern 2.

FIG.17

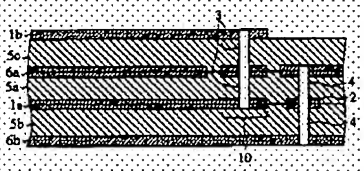


FIG.18

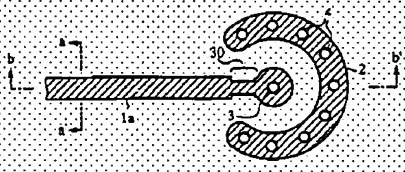
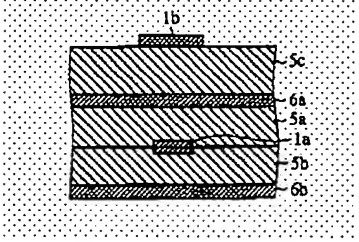


FIG.20



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohhashi et al US Patent 6,400,234 in view of Buck US Patent 6,639,486.

The primary reference, Ohhashi et al discloses a strip line feeding apparatus comprising of a first and second strip conductor patterns 1a, 1b, (first and second conductive devices) first, second and third dielectric substrates 5a, 5b, 5c, a first and second ground conductor patterns 6a, 6b (first and second reference potential planes). And the second strip conductor pattern 1b, the third dielectric substrate 5c and the first ground conductor pattern 6a form a micro strip line. The first and second strip conductor patterns are connected to each other through the through-hole for inner conductor 3. (See 35 USC 102(b) rejection for details of Ohhashi et al reference)

Ohhashi et al is shown to teach all the limitation of the claim with the exception of the dielectric material having a dielectric constant εr, which corresponds to that of a softboard material in an area of at least one of the first and fourth planes.

Buck disclose in figure 2, a substrate 24 composed of a suitable dielectric material, such as 10 mil softboard with a dielectric constant 2.2. (Column 3; lines 16-22)

Therefore one of ordinary skill in the art at the time of the invention would have found it obvious to substitute the general dielectric of Ohhashi et al the with the softboard dielectric as taught by Buck. The motivation for this modification would have been to provide the circuit with a resilient substrate.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohhashi et al US Patent 6,400,234 in view of Nagaishi et al 6,794,961.

The primary reference, Ohhashi et al discloses a strip line feeding apparatus comprising of a first and second strip conductor patterns 1a, 1b, (first and second conductive devices) first, second and third dielectric substrates 5a, 5b, 5c, a first and second ground conductor patterns 6a, 6b (first and second reference potential planes). And the second strip conductor pattern 1b, the third dielectric substrate 5c and the first ground conductor pattern 6a form a micro strip line. The first and second strip conductor patterns are connected to each other through the through-hole for inner conductor 3. (See 35 USC 102(b) rejection for details of Ohhashi et al reference)

Ohhashi et al is shown to teach all the limitation of the claim with the exceptions of the additional conductive device having a plurality of cylindrical vias that form a ring around the plated through hole device, a wall have a conductive material in an area of the recess and forming the additional conductive device in the area of the plated through hole device and a metal-plated, tubular device forms the additional conductive device in the area of the plated through hole device.

Nagaishi et al disclose in figures 2a and 2b FIGS. 2A and 2B a cylindrical metallic pattern 18 is used to connect the grounding metal layers 9 and 10 to each other. The cylindrical metallic pattern 18 and a center conductor 19 construct a via having a coaxial structure. Nagaishi et al further disclose in figures 3A, 3B, 3C, 4A, and 4B, a group of vias 20 connecting the grounding metallic layers 9 and 11. The via group 20 functions as an electromagnetic wave wall to confine the electromagnetic wave

propagating in parallel between the metallic layers 9 and 10 and between the metallic layers 10 and 11. The vias can be distributed in a polygon shape having four or more sides such as a quadrangle or in a circular shape. (Column 5; line 12 through column 6; line 10)

FIG. 2A

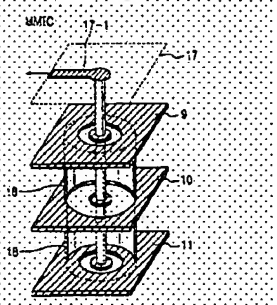


FIG. 2B

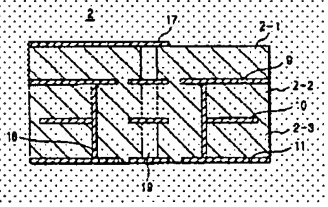


FIG. 3C

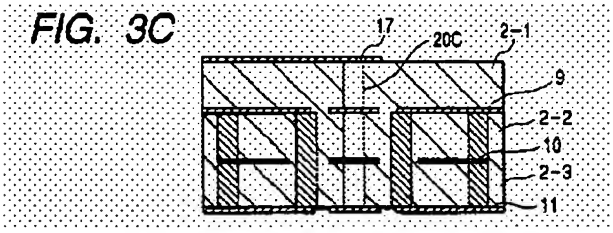


FIG. 4A

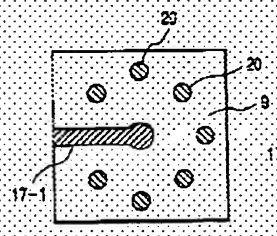
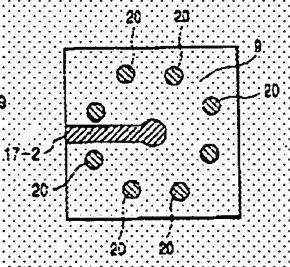


FIG. 4B



Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohhashi et al US Patent 6,400,234 in view of Tajima et al US Patent 5,885,916.

The primary reference, Ohhashi et al discloses a strip line feeding apparatus comprising of a first and second strip conductor patterns 1a, 1b, (first and second conductive devices) first, second and third dielectric substrates 5a, 5b, 5c, a first and second ground conductor patterns 6a, 6b (first and second reference potential planes). And the second strip conductor pattern 1b, the third dielectric substrate 5c and the first ground conductor pattern 6a form a micro strip line. The first and second strip conductor patterns are connected to each other through the through-hole for inner conductor 3. (See 35 USC 102(b) rejection for details of Ohhashi et al reference)

Ohhashi et al is shown to teach all the limitation of the claim with the exceptions of a material having a low loss factor at high frequencies is situated in the area of the additional conductive device in the area of the plated through hole device.

Tajima et al teaches a dielectric material having a low dielectric loss factor at high frequencies.

One of ordinary skill in the art at the time of the invention would have found to obvious to substitute the general dielectric material of Ohhashi et al with the dielectric material with low loss factor as taught by Tajima et al. The motivation for this modification would have been to provide a dielectric material with excellent mechanical properties such as large strength and excellent chemical stability. (Abstract)

Allowable Subject Matter

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E. Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimberly E Glenn
Examiner
Art Unit 2817

keg

Robert Pascal
Supervisory Patent Examiner
Technology Center 2800